We create chemistry

# Safety data sheet



BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.
Date / Revised: 12.10.2023 Version: 4.0
Date previous version: 30.08.2022 Previous version: 3.0
Date / First version: 31.03.2014
Product: **Citronellyl Acetate BMBcert®**
(ID no. 30786719/SDS_GEN_GB/EN)
Date of print 26.06.2025

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

# Citronellyl Acetate BMBcert®

Chemical name: Citronellyl acetate
CAS Number: 150-84-5

REACH registration number: 01-2119959860-27-0000

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Chemical, Chemical for detergents, Cosmetic and oral care chemical, flavoring substance

For the detailed identified uses of the product see appendix of the safety data sheet.

### 1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF plc
4th and 5th Floors, 2 Stockport Exchange
Railway Road, Stockport, SK1 3GG
UNITED KINGDOM

Telephone: +44 161 475 3000
E-mail address: product-safety-uk-and-ireland@basf.com

### 1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

## SECTION 2: Hazards Identification

### 2.1. Classification of the substance or mixture

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

| | |
|---|---|
| Skin Corr./Irrit. 2 | H315 Causes skin irritation. |
| Aquatic Chronic 2 | H411 Toxic to aquatic life with long lasting effects. |

For the classifications not written out in full in this section the full text can be found in section 16.

### 2.2. Label elements

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Pictogram:

Signal Word:
Warning

Hazard Statement:

| | |
|---|---|
| H315 | Causes skin irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary Statements (Prevention):

| | |
|---|---|
| P280 | Wear protective gloves. |
| P273 | Avoid release to the environment. |

Precautionary Statements (Response):

| | |
|---|---|
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P332 + P313 | If skin irritation occurs: Get medical attention. |
| P391 | Collect spillage. |

Precautionary Statements (Disposal):

| | |
|---|---|
| P501 | Dispose of contents and container to hazardous or special waste collection point. |

### 2.3. Other hazards

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

## SECTION 3: Composition/Information on Ingredients

### 3.1. Substances

Chemical nature

Citronellyl acetate
CAS Number: 150-84-5
EC-Number: 205-775-0

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

### 3.2. Mixtures

Not applicable

## SECTION 4: First-Aid Measures

### 4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

### 4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing media
Suitable extinguishing media:
carbon dioxide, dry powder, foam

Unsuitable extinguishing media for safety reasons:
water jet

### 5.2. Special hazards arising from the substance or mixture
Endangering substances: carbon oxides, harmful vapours
Advice: The substances/groups of substances mentioned can be released in case of fire.

### 5.3. Advice for fire-fighters
Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Cool endangered containers with water-spray.

## SECTION 6: Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Avoid contact with the skin, eyes and clothing. Use personal protective clothing. Information regarding personal protective measures, see section 8. Do not breathe vapour/spray.

### 6.2. Environmental precautions
Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

### 6.3. Methods and material for containment and cleaning up
For small amounts: Contain with absorbent material (e.g. sand, silica gel, acid binder, general purpose binder, sawdust).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations.

### 6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

## SECTION 7: Handling and Storage

### 7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed. This product may cause irritations; wash your hands after every contact.

Protection against fire and explosion:
Take precautionary measures against static discharges. Avoid all sources of ignition: heat, sparks, open flame.

### 7.2. Conditions for safe storage, including any incompatibilities

Odour-sensitive: Segregate from products releasing odours.
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Protect contents from the effects of light.

### 7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1. Control parameters

Components with occupational exposure limits

No substance specific occupational exposure limits known.

PNEC
freshwater: 0.00348 mg/l

marine water: 0.000348 mg/l

intermittent release: 0.0348 mg/l

STP: 10 mg/l

sediment (freshwater): 0.851 mg/kg

sediment (marine water): 0.0851 mg/kg

soil: 0.168 mg/kg

oral (secondary poisoning):
No PNEC value available.

DNEL
worker:
Long-term exposure- systemic effects, Inhalation: 17 mg/m3

worker:

Long-term exposure- systemic effects, dermal: 4.8 mg/kg

consumer:
Long-term exposure- systemic effects, Inhalation: 4.2 mg/m3

consumer:
Long-term exposure- systemic effects, dermal: 2.4 mg/kg

consumer:
Long-term exposure- systemic effects, oral: 2.4 mg/kg

## 8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for higher concentrations or long-term effect: Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Consider the risk management measures as outlined in the exposure scenario.

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Consider the risk management measures as outlined in the exposure scenario.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Consider the risk management measures as outlined in the exposure scenario.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

Consider the risk management measures as outlined in the exposure scenario.

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid contact with the skin, eyes and clothing. No eating, drinking, smoking or tobacco use at the place of work. Hands

and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Form: | liquid | |
| Colour: | colourless, clear | |
| Odour: | flowery, fruity | |
| Odour threshold: | < 100 ppm | |
| pH value: | 4.4<br>(0.0159 g/l, 20 °C) | (pH Meter) |
| Melting point: | < -100 °C | (OECD Guideline 102) |
| Boiling point: | 239.8 °C<br>(1,013 hPa) | (measured) |
| Flash point: | 93.5 °C | (ASTM D93, closed cup) |
| Evaporation rate: | Value can be approximated from Henry's Law Constant or vapor pressure. | |
| Flammability: | hardly combustible | (derived from flash point) |
| Lower explosion limit: | 0.6 %(V)<br>(90.7 °C) | (air) |
| Upper explosion limit: | For liquids not relevant for classification and labelling. | |
| Ignition temperature: | 235 °C | (DIN 51794) |
| Vapour pressure: | 0.0197 hPa<br>(20 °C)<br>Extrapolated value, dynamic | (measured) |
| Density: | 0.888 g/cm3<br>(20 - 25 °C)<br>Literature data.<br>0.862 g/cm3<br>(55 °C) | |
| Relative density: | 0.888<br>(25 °C)<br>Literature data. | |
| Relative vapour density (air): | 6.83<br>(20 °C)<br>Heavier than air. | (calculated) |
| Solubility in water: | 15.9 mg/l<br>(25 °C) | (Directive 92/69/EEC, A.6) |
| Solubility (qualitative) solvent(s): | organic solvents soluble | |
| Partitioning coefficient n-octanol/water (log Kow): | 4.9<br>(25 °C) | (Directive 92/69/EEC, A.8) |

| | | |
|---|---|---|
| Self ignition: | Based on its structural properties the product is not classified as self-igniting. | Test type: Spontaneous self-ignition at room-temperature. |
| Thermal decomposition: | >= 390 °C<br>No exothermic decomposition within the mentioned temperature range. | |
| Viscosity, dynamic: | 2.37 mPa.s<br>(20 °C)<br>The value was determined by calculation from the detected kinematic viscosity. | (OECD Guideline 114) |
| | 1.58 mPa.s<br>(40 °C)<br>The value was determined by calculation from the detected kinematic viscosity. | (OECD Guideline 114) |
| Viscosity, kinematic: | 2.66 mm2/s<br>(20 °C) | (OECD Guideline 114) |
| | 1.81 mm2/s<br>(40 °C) | (OECD Guideline 114) |
| Explosion hazard: | Based on the chemical structure there is no indication of explosive properties. | |
| Fire promoting properties: | Based on its structural properties the product is not classified as oxidizing. | |

### 9.2. Other information

| | | |
|---|---|---|
| Self heating ability: | It is not a substance capable of spontaneous heating. | |
| SADT: | Study scientifically not justified. | |
| pKA: | Study scientifically not justified. | |
| Adsorption/water - soil: | KOC: 2409; log KOC: 3.382 | (calculated) |
| Surface tension: | Based on chemical structure, surface activity is not to be expected. | |
| Grain size distribution: | The substance / product is marketed or used in a non solid or granular form. | |
| Molar mass: | 198.31 g/mol | |

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

| | | |
|---|---|---|
| Corrosion to metals: | Corrosive effects to metal are not anticipated. | |
| Formation of flammable gases: | Remarks: | Forms no flammable gases in the presence of water. |

### 10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

### 10.3. Possibility of hazardous reactions
No hazardous reactions if stored and handled as prescribed/indicated.

### 10.4. Conditions to avoid
See SDS section 7 - Handling and storage.

### 10.5. Incompatible materials

Substances to avoid:
oxidizing agents

### 10.6. Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

## SECTION 11: Toxicological Information

### 11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): 6,800 mg/kg

LD50 rabbit (dermal): > 2,000 mg/kg

Irritation

Assessment of irritating effects:
Skin contact causes irritation. Not irritating to the eyes.

Experimental/calculated data:
Skin corrosion/irritation
rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation
rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. A controlled medical study in humans did not reveal a skin sensitizing effect.

Experimental/calculated data:
Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)

Human Maximization Test human: Non-sensitizing.

Germ cell mutagenicity

Assessment of mutagenicity:
In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
In long-term studies in rats and mice in which the substance was given by gavage, a carcinogenic effect was not observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
In animal studies the substance did not cause malformations. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Based on available data, the classification criteria are not met.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No substance-specific organtoxicity was observed after repeated administration to animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aspiration hazard

No aspiration hazard expected.

## SECTION 12: Ecological Information

### 12.1. Toxicity

Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 6.1 mg/l, Brachydanio rerio (OECD Guideline 203, semistatic)
The statement of the toxic effect relates to the analytically determined concentration.

Aquatic invertebrates:
EC50 (48 h) 3.48 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)
The statement of the toxic effect relates to the analytically determined concentration. The product has low solubility in the test medium. A saturated solution has been tested.

Aquatic plants:
EC50 (72 h) > 7.2 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

No observed effect concentration (72 h) 2.22 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)
The statement of the toxic effect relates to the analytically determined concentration.

Microorganisms/Effect on activated sludge:
EC20 (30 min) > 1,000 mg/l, activated sludge (OECD Guideline 209, aerobic)

Chronic toxicity to fish:
No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates:
No data available regarding toxicity to daphnids.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

### 12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):

Readily biodegradable (according to OECD criteria).

Elimination information:
93 % CO2 formation relative to the theoretical value (28 d) (OECD Guideline 310) (aerobic, activated sludge, domestic, adapted)

Assessment of stability in water:
In contact with water the substance will hydrolyse slowly.
Information on Stability in Water (Hydrolysis):
$t_{1/2}$ 4,101 h (20 °C, pH value 4), (OECD Guideline 111, pH 4)

$t_{1/2}$ 2,523 h (25 °C, pH value 4), (OECD Guideline 111, pH 4)

$t_{1/2}$ 8,191 h (20 °C, pH value 7), (OECD Guideline 111, pH 7)

$t_{1/2}$ 4,905 h (25 °C, pH value 7), (OECD Guideline 111, pH 7)

$t_{1/2}$ 337 h (20 °C, pH value 9), (OECD Guideline 111, pH 9)

$t_{1/2}$ 185 h (25 °C, pH value 9), (OECD Guideline 111, pH 9)

### 12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

Bioaccumulation potential:
No data available.

### 12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will rapidly evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is expected.

### 12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

### 12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

## SECTION 13: Disposal Considerations

### 13.1. Waste treatment methods

Observe national and local legal requirements.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).
This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

## SECTION 14: Transport Information

**Land transport**

ADR

| | |
|---|---|
| UN number or ID number: | UN3082 |
| UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains CITRONELLYL ACETATE) |
| Transport hazard class(es): | 9, EHSM |
| Packing group: | III |
| Environmental hazards: | yes |
| Special precautions for user: | None known |

RID

| | |
|---|---|
| UN number or ID number: | UN3082 |
| UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains CITRONELLYL ACETATE) |
| Transport hazard class(es): | 9, EHSM |
| Packing group: | III |
| Environmental hazards: | yes |
| Special precautions for user: | None known |

**Inland waterway transport**

ADN

| | |
|---|---|
| UN number or ID number: | UN3082 |
| UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains CITRONELLYL ACETATE) |
| Transport hazard class(es): | 9, EHSM |
| Packing group: | III |
| Environmental hazards: | yes |
| Special precautions for user: | None known |

Transport in inland waterway vessel
Not evaluated

**Sea transport**

IMDG

| | |
|---|---|
| UN number or ID number: | UN 3082 |
| UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains CITRONELLYL ACETATE) |
| Transport hazard class(es): | 9, EHSM |
| Packing group: | III |
| Environmental hazards: | yes<br>Marine pollutant: YES |
| Special precautions for user: | |

**Air transport**

IATA/ICAO

| | |
|---|---|
| UN number or ID number: | UN 3082 |
| UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains CITRONELLYL ACETATE) |
| Transport hazard class(es): | 9, EHSM |
| Packing group: | III |
| Environmental hazards: | yes |
| Special precautions for user: | None known |

## 14.1. UN number or ID number
See corresponding entries for “UN number or ID number” for the respective regulations in the tables above.

## 14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

## 14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

## 14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

### 14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

### 14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

### 14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

**Further information**
This product is subject to the most recent edition of "The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations" and their amendments (United Kingdom).
Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

## SECTION 15: Regulatory Information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Prohibitions, Restrictions and Authorizations

UK REACH SI, Annex XVII, Marketing and Use Restrictions
Number on List: 3

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
List entry in regulation: E2

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product may be subject to the Control of Major Accident Hazards Regulations (COMAH), and amendments if specific threshold tonnages are exceeded (United Kingdom).

### 15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

## SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Skin Corr./Irrit. 2
Aquatic Acute 2
Aquatic Chronic 2

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

| | |
|---|---|
| Skin Corr./Irrit. | Skin corrosion/irritation |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic |
| H315 | Causes skin irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Abbreviations
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

## Annex: Exposure Scenarios

**Index**



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### 1. Short title of exposure scenario

Compounding, (use in industrial settings)
ERC2; PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC2: Formulation into mixture |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 2.5 % |

| | |
|---|---|
| Emission factor water | 0.2 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.487731 |
| | Risk from environmental exposure is driven by soil. |
| Maximum amount of safe use | 328<br>kg/d |
| Risk from environmental exposure is driven by soil. | |

| | |
|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 100 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 60 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | |
| ***Exposure estimate and reference to its source*** | |

| | |
|---|---|
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0034 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.000714 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 0.0165 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.000972 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 100 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 240 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Local exhaust ventilation | Effectiveness: 90 % |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0686 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.014286 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 1.4873 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.087486 |
| ***Guidance to Downstream Users*** | |

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|---|
| For scaling see: http://www.ecetoc.org/tra |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC5: Mixing or blending in batch processes<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 100 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 240 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Local exhaust ventilation | Effectiveness: 90 % |
| Wear chemically resistant gloves in combination with specific activity training | Effectiveness: 95 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.6857 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.142857 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 2.4788 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.14581 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |

| | |
|---|---|
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 240 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour) | Effectiveness: 70 % |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.3429 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.071429 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 3.7182 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.218715 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| | |
|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 100 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

| | |
|---|---|
| Duration and Frequency of activity | 60 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Local exhaust ventilation | Effectiveness: 95 % |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 1.3714 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.285714 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 0.4131 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.024302 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing).<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 60 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |

| ***Exposure estimate and reference to its source*** | |
|---|---|
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.1714 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.035714 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 2.0656 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.121509 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC15: Use a laboratory reagent.<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 100 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 15 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with ‘basic’ employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0343 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.007143 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Worker |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 4.1313 mg/m³ |

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| Risk Characterization Ratio (RCR) | 0.243017 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra | |

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## 2. Short title of exposure scenario

Formulation, (use in industrial settings)
ERC2; PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

### Control of exposure and risk management measures

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|---|---|---|
| **Contributing exposure scenario** | | |
| **Use descriptors covered** | AISE SPERC 2.1.a.v2: AISE SPERC 2.1.a.v2 | |
| ***Operational conditions*** | | |
| Annual amount used in the EU | 90,000 kg | |
| Minimum emission days per year | 250 | |
| Emission factor air | 0 % | |
| Emission factor water | 0.01 % | |
| Emission factor soil | 0 % | |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d | |
| Dilution factor river | 10 | |
| Dilution factor coast | 100 | |
| ***Risk Management Measures*** | | |
| Wastewater treatment measures considered suitable are, e.g. | | Precipitation, Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment | |
| Risk Characterization Ratio (RCR) | 0.074831 | |
| | Risk from environmental exposure is driven by freshwater sediment. | |
| Maximum amount of safe use | 4,810.8 kg/d | |
| Risk from environmental exposure is driven by freshwater sediment. | | |

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| **Contributing exposure scenario** |

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|---|---|
| **Use descriptors covered** | AISE SPERC 2.1.b.v2: AISE SPERC 2.1.b.v2 |
| ***Operational conditions*** | |
| Annual amount used in the EU | 36,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0.1 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Wastewater treatment measures considered suitable are, e.g. | Precipitation, Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.227327 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 633.4 kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

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|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | AISE SPERC 2.1.c.v2: AISE SPERC 2.1.c.v2 |
| ***Operational conditions*** | |
| Annual amount used in the EU | 28,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0.2 % |
| Emission factor soil | 0 % |

| | |
|---|---|
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Wastewater treatment measures considered suitable are, e.g. | Precipitation, Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.340821 |
| | Risk from environmental exposure is driven by soil. |
| Maximum amount of safe use | 328.6 kg/d |
| Risk from environmental exposure is driven by soil. | |

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|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | AISE SPERC 2.1.j.v2: AISE SPERC 2.1.j.v2 |
| ***Operational conditions*** | |
| Annual amount used in the EU | 26,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0.1 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Wastewater treatment measures considered suitable are, e.g. | Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |

| ***Exposure estimate and reference to its source*** | |
|---|---|
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.170847 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 608.7<br>kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | AISE SPERC 2.1.k.v2: AISE SPERC 2.1.k.v2 |
| ***Operational conditions*** | |
| Annual amount used in the EU | 14,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0.2 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Wastewater treatment measures considered suitable are, e.g. | Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.182143 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 307.5<br>kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** |
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| | |
|---|---|
| **Use descriptors covered** | AISE SPERC 2.1.l.v2: AISE SPERC 2.1.l.v2 |
| ***Operational conditions*** | |
| Annual amount used in the EU | 14,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0.4 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Wastewater treatment measures considered suitable are, e.g. | Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation. |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.340821 |
| | Risk from environmental exposure is driven by soil. |
| Maximum amount of safe use | 164.3 kg/d |
| Risk from environmental exposure is driven by soil. | |

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|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | ERC2: Formulation into mixture |
| ***Operational conditions*** | |
| Annual amount used in the EU | 40,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 0 % |
| Emission factor soil | 0.01 % |

| | |
|---|---|
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |

| ***Risk Management Measures*** | |
|---|---|
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |

| ***Exposure estimate and reference to its source*** | |
|---|---|
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.024 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 6,666.8 kg/d |

Risk from environmental exposure is driven by freshwater sediment.

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC2: Formulation into mixture |
| ***Operational conditions*** | |
| Annual amount used in the EU | 4,000 kg |
| Minimum emission days per year | 250 |
| Emission factor air | 0 % |
| Emission factor water | 2 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |

| ***Risk Management Measures*** | |
|---|---|
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |

| ***Exposure estimate and reference to its source*** | |
|---|---|
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.486853 |
| | Risk from environmental exposure is driven by soil. |
| Maximum amount of safe use | 32.9 kg/d |

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|---|---|
| | |
| Risk from environmental exposure is driven by soil. | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 60 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0009 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.000179 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 0.0041 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.000243 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional |

| | |
|---|---|
| | controlled exposure or processes with equivalent containment condition<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 240 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0171 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.003571 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 3.7182 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.218715 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC5: Mixing or blending in batch processes<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |

| | |
|---|---|
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 240 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.3429 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.071429 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 6.1969 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.364526 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>Use domain: industrial |

| ***Operational conditions*** | |
|---|---|
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 60 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.3429 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.071429 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 2.0656 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.121509 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates) | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing).<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** |
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|---|---|
| **Use descriptors covered** | PROC14: Tabletting, compression, extrusion, pelletisation, granulation<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC15: Use a laboratory reagent.<br>Use domain: industrial |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 25 % |
| Physical state | liquid |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | 15 min 5 days per week |
| Indoor/Outdoor | Indoor |
| ***Risk Management Measures*** | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | Effectiveness: 90 % |
| Avoid splashing. | |
| Wear chemically resistant gloves in combination with 'basic' employee training. | |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - dermal, long-term - systemic |
| Exposure estimate | 0.0086 mg/kg bw/day |
| Risk Characterization Ratio (RCR) | 0.001786 |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach. |
| | Worker - inhalation, long-term - systemic |
| Exposure estimate | 1.0328 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.060754 |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see | |

exposure estimates)

* * * * * * * * * * * * * * * * *

## 3. Short title of exposure scenario

Use in Cleaning Agents, (use in industrial settings)
ERC4; PROC1, PROC2, PROC4, PROC7, PROC8b, PROC10, PROC13

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)<br>For this scenario, local exposure has not been assesssed. The contribution to the regional background concentration is taken into account. In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |
| ***Operational conditions*** | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC4: Chemical production where opportunity for |

| | |
|---|---|
| | exposure arises<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC7: Industrial spraying<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC10: Roller application or brushing<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC13: Treatment of articles by dipping and pouring.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

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## 4. Short title of exposure scenario

Use as an intermediate, (use in industrial settings)
ERC6a; PROC1, PROC2, PROC3, PROC8b, PROC9, PROC15

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC6a: Use of intermediate<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |
| ***Operational conditions*** | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC9: Transfer of substance or preparation into small |

| | |
|---|---|
| | containers (dedicated filling line, including weighing).<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC15: Use a laboratory reagent.<br>No assessment required - Industrial use as intermediate under strictly controlled conditions |

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## 5. Short title of exposure scenario

Use in Cleaning Agents, Use in/as Surface care and Polishes, (use in professional settings)
ERC8a, ERC8d; PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13

## Control of exposure and risk management measures

| **Contributing exposure scenario** | | |
|---|---|---|
| **Use descriptors covered** | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) | |
| ***Operational conditions*** | | |
| Annual amount used in the EU | 200,000 kg | |
| Minimum emission days per year | 365 | |
| Emission factor air | 100 % | |
| Emission factor water | 100 % | |
| Emission factor soil | 0 % | |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d | |
| Dilution factor river | 10 | |
| Dilution factor coast | 100 | |
| ***Risk Management Measures*** | | |
| Type of STP | | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment | |
| Risk Characterization Ratio (RCR) | 0.178739 | |
| | Risk from environmental exposure is driven by freshwater sediment. | |
| Maximum amount of safe use | 0.613124 | |

| | |
|---|---|
| | kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** | | |
|---|---|---|
| **Use descriptors covered** | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) | |
| ***Operational conditions*** | | |
| Annual amount used in the EU | 200,000 kg | |
| Minimum emission days per year | 365 | |
| Emission factor air | 100 % | |
| Emission factor water | 100 % | |
| Emission factor soil | 20 % | |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d | |
| Dilution factor river | 10 | |
| Dilution factor coast | 100 | |
| ***Risk Management Measures*** | | |
| Type of STP | | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment | |
| Risk Characterization Ratio (RCR) | 0.178739 | |
| | Risk from environmental exposure is driven by freshwater sediment. | |
| Maximum amount of safe use | 0.613124<br>kg/d | |
| Risk from environmental exposure is driven by freshwater sediment. | | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC4: Chemical production where opportunity for exposure arises<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC10: Roller application or brushing<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk |

| | |
|---|---|
| | characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC11: Non industrial spraying<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PROC13: Treatment of articles by dipping and pouring.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |

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## 6. Short title of exposure scenario

Use in Cleaning Agents, Use in/as Surface care and Polishes, (consumer use)
ERC8a, ERC8d; PC31, PC35

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 365 |
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |

| | |
|---|---|
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124 kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| | |
|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 365 |
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 20 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124 kg/d |

| | |
|---|---|
| | |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PC31: Polishes and Wax Blends.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PC35: Washing and Cleaning Products (including solvent based products).<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

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## 7. Short title of exposure scenario

Use in/as Air care products, (consumer use)
ERC8a; PC3

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |

| | |
|---|---|
| Minimum emission days per year | 365 |
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124<br>kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| | |
|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | PC3: Air care products. |
| ***Operational conditions*** | |
| Concentration of the substance | Citronellyl acetate<br>Content: >= 0 % - <= 2.5 % |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |
| Duration and Frequency of activity | Exposure duration: 480 min<br>Relevant for inhalative exposure estimates |
| Duration and Frequency of activity | 150 uses per year |
| Room size | 16 m3 |
| Ventilation rate per hour | 1 |
| body weight | 65 kg |
| Spray duration | 28800 sec |
| ***Risk Management Measures*** | |
| Consumer Measures | Ensure spraying away from persons. |

| ***Exposure estimate and reference to its source*** | |
|---|---|
| Assessment method | EASY TRA v4.1, ConsExpo v4.1, Inhalation model: Exposure to spray/dust |
| | Consumer - inhalation, long-term - systemic |
| Exposure estimate | 0.0107 mg/m³ |
| Risk Characterization Ratio (RCR) | 0.002544 |
| | The exposure calculation is based on the mean concentration on the day of exposure. |
| ***Guidance to Downstream Users*** | |
| For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PC3: Air care products.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

**********

## 8. Short title of exposure scenario

Use in cosmetics, (consumer use)
ERC8a; PC28, PC39

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 365 |
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 0 % |

| | |
|---|---|
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124 kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PC28: Perfumes, Fragrances.<br>In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | PC39: Cosmetics, personal care products.<br>In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

**********

## 9. Short title of exposure scenario

other consumer applications than fragrance, (consumer use)
ERC8a, ERC8d; PC8

### Control of exposure and risk management measures

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 365 |
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 0 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124 kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| **Contributing exposure scenario** | |
|---|---|
| **Use descriptors covered** | ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |
| ***Operational conditions*** | |
| Annual amount used in the EU | 200,000 kg |
| Minimum emission days per year | 365 |

| | |
|---|---|
| Emission factor air | 100 % |
| Emission factor water | 100 % |
| Emission factor soil | 20 % |
| Receive Surf. Water (Flow Rate). | 18,000 m3/d |
| Dilution factor river | 10 |
| Dilution factor coast | 100 |
| ***Risk Management Measures*** | |
| Type of STP | Municipal STP |
| Assumed sewage treatment plant flow (m3/d) | 2,000 m3/d |
| ***Exposure estimate and reference to its source*** | |
| Assessment method | EASY TRA v4.1, ECETOC TRA v3.0, Environment |
| Risk Characterization Ratio (RCR) | 0.178739 |
| | Risk from environmental exposure is driven by freshwater sediment. |
| Maximum amount of safe use | 0.613124<br>kg/d |
| Risk from environmental exposure is driven by freshwater sediment. | |

| | |
|---|---|
| **Contributing exposure scenario** | |
| **Use descriptors covered** | PC8: Biocidal Products.<br>In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008. |
| ***Operational conditions*** | |
| Vapour pressure of the substance during use | 1.97 Pa |
| Process temperature | 20 °C |

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